

ABSTRACT OF THE DISCLOSURE

An ATM cell transmission route is formed by hierarchically connecting a plurality of buses for connecting at least one first device and a plurality of second devices, and an ATM cell is to be transmitted from a first device designed to transmit/receive ATM cells and connected to one of the plurality of buses. The first device generates an ATM cell transmission message by inserting the ATM cell into a message in a format depending on the bus, and outputs an address for designating a device as the destination of the ATM cell transmission message by using a bus identifier for identifying one of the plurality of buses and a device identifier for identifying one of the plurality of devices. The ATM cell transmission message is then written in the device designated by the address. With this operation, an ATM communication system having a simple arrangement can be provided. In addition, ATM communication can be performed, with the QOS (quality of service) being guaranteed by priority control of an arbiter connected to one of the plurality of buses.